

The Journal of Physiology

Volume 596 / Number 4 / 15 February 2018

A publication of The Physiological Society

Editor-in-Chief

Kim E. Barrett *San Diego, CA, USA*

Deputy Editor-in-Chief

Ian D. Forsythe *Leicester, UK*

Senior Reviews Editor

Ole Petersen *Cardiff, UK*

Senior CrossTalk Editor

Francisco Sepúlveda *Valdivia, Chile*

CrossTalk Editor – Neuroscience

Derek Bowie *Montreal, QC, Canada*

CrossTalk Editor

Peying Fong *Manhattan, KS, USA*

Senior Editors

Jaideep S. Bains *Calgary, AB, Canada*

Donald M. Bers *Davis, CA, USA*

Laura Bennet *Auckland, New Zealand*

Peying Fong *Manhattan, KS, USA*

Michael C. Hogan *La Jolla, CA, USA*

Yoshihiro Kubo *Okazaki, Japan*

Ole Paulsen *Cambridge, UK*

Scott K. Powers *Gainesville, FL, USA*

Harold D. Schultz *Omaha, NE, USA*

Janet Taylor *Sydney, Australia*

Statistics Consultant

Alan Batterham *Middlesbrough, UK*

Senior Ethics Editor

David Grundy *Sheffield, UK*

Editors

Philip Ainslie *Vancouver, BC, Canada*

Jeffrey Ardell *Los Angeles, CA, USA*

Derek Bowie *Montreal, QC, Canada*

Dennis Brown *Boston, MA, USA*

Richard Carson *Dublin, Ireland*

Julie Chan *Kaohsiung, Taiwan*

Hsiao Chan *Hong Kong, China*

Sumantra Chattarji *Bangalore, India*

Colleen Clancy *Davis, CA, USA*

Diego Contreras *Philadelphia, PA, USA*

Kim Dora *Oxford, UK*

Dario Farina *Goettingen, Germany*

Robert Fenton *Aarhus, Denmark*

Alastair Ferguson *Kingston, ON, Canada*

Gregory Funk *Edmonton, AB, Canada*

Dino Giussani *Cambridge, UK*

Maike Glitsch *Oxford, UK*

Bruno Grassi *Udine, Italy*

Paul Greenhaff *Nottingham, UK*

Fiona Gribble *Cambridge, UK*

David Grundy *Sheffield, UK*

Karyn L. Hamilton *Fort Collins, CO, USA*

Robert D Harvey *Reno, NV, USA*

Livia Hool *Crawley, Australia*

Troy Hornberger *Madison, WI, USA*

Tadashi Isa *Okazaki, Japan*

Andrew King *Oxford, UK*

Bjorn Knollmann *Nashville, TN, USA*

Takashi Kurahashi *Osaka, Japan*

Florian Lesage *Valbonne, France*

Benedito Machado *São Paulo, Brazil*

Giovanni Mann *London, UK*

Walter Marcotti *Sheffield, UK*

Bettina Mittendorfer *St Louis, MO, USA*

Kathleen G. Morgan *Boston, MA, USA*

Janna Morrison *Adelaide, Australia*

Ruth Murrell-Lagnado *Cambridge, UK*

Matthew Nolan *Edinburgh, UK*

Yasushi Okamura *Osaka, Japan*

John W. Osborn *Minneapolis, MN, USA*

Reinhold Penner *Honolulu, HI, USA*

Frank Powell *San Diego, CA, USA*

Weifang Rong *Shanghai, China*

Luis Fernando Santana *Davis, CA, USA*

Steve Segal *Columbia, MO, USA*

Michael Shattock *London, UK*

Mike Shipston *Edinburgh, UK*

Jesper Sjöström *Montréal, QC, Canada*

W. Rowland Taylor *Portland, OR, USA*

Katalin Toth *Québec City, QC, Canada*

Jolanda van der Velden *Amsterdam, Netherlands*

Jamie Vandenberg *Sydney, Australia*

David Wyllie *Edinburgh, UK*

Jian Yang *New York, NY, USA*

Michisuke Yuzaki *Keio, Japan*

Editorial Staff

Sally Howells *Managing Editor*

Diana Jones *Peer Review Coordinator*

Marie Allan *Peer Review Coordinator*

Helen Leedham *Peer Review Coordinator*

Imran Ahmed *Editorial Administrator*

The Physiological Society and The Physiological Society logo and The Journal of Physiology and The Journal of Physiology logo are trade marks belonging to The Physiological Society and are registered in the UK and in the EU Community, respectively.

Modelling signal decay in visual and auditory Mauthner-cell dendrites. The results showed that a differential expression of voltage-dependent conductances contributes to modality specific information processing. The image has been repeated several times for the journal cover. See Medan *et al.* pp 667–689.

Crosstalk

- 537 CrossTalk proposal: Acute exercise elicits damage to the endothelial layer of systemic blood vessels in healthy individuals
Volker Adams
- 541 CrossTalk opposing view: Acute exercise does not elicit damage to the endothelial layer of systemic blood vessels in healthy individuals
Ryan M. Sapp and James M. Hagberg
- 545 Rebuttal from Volker Adams
Volker Adams
- 547 Rebuttal from Ryan M. Sapp and James M. Hagberg
Ryan M. Sapp and James M. Hagberg

Perspectives

- 549 Sodium channel clusters: harmonizing the cardiac conduction orchestra
*Rengasayee Veeraraghavan and Przemysław B. Radwański (see Hichri *et al.* p 563)*
- 551 The role of breakfast in adipose tissue biology
*Jun Yoshino (see Gonzalez *et al.* p 609)*
- 553 Mixing audio and video in dendrites
*Hermann Cuntz (see Medan *et al.* p 667)*
- 555 Dietary branched chain amino acids and metabolic health: when less is more
*Cristal M. Hill and Christopher D. Morrison (see Cummings *et al.* p 623)*

Journal club

- 557 Spatial information from cutaneous and muscle receptors contributes to perceived finger position and ownership
Jack Brooks
- 559 Signalling of vasodilatation across an exercise transient
William E. Hughes
- 561 Cryotherapy: not as cool as it seems
Shamara Nadarajah, Ramya Ariyagunaratnam and Eric D. Jong

Cardiovascular

- 563 Distribution of cardiac sodium channels in clusters potentiates ephaptic interactions in the intercalated disc
Echrak Hichri, Hugues Abriel and Jan P. Kucera (see Perspectives)
- 591 Modulation of sympathetic vasoconstriction is critical for the effects of sleep on arterial pressure in mice
Viviana Lo Martire, Alessandro Silvani, Sara Alvente, Stefano Bastianini, Chiara Berteotti, Alice Valli and Giovanna Zoccoli

Endocrine, nutrition and metabolism

- 609 Molecular adaptations of adipose tissue to 6 weeks of morning fasting vs. daily breakfast consumption in lean and obese adults
Javier T. Gonzalez, Judith D. Richardson, Enhad A. Chowdhury, Françoise Koumanov, Geoffrey D. Holman, Scott Cooper, Dylan Thompson, Kostas Tsintzas and James A. Betts (see Perspectives)
- 623 Restoration of metabolic health by decreased consumption of branched-chain amino acids
Nicole E. Cummings, Elizabeth M. Williams, Ildiko Kasza, Elizabeth N. Konon, Michael D. Schaid, Brian A. Schmidt, Chetan Poudel, Dawn S. Sherman, Deyang Yu, Sebastian I. Arriola Apelo, Sara E. Cottrell, Gabriella Geiger, Macy E. Barnes, Jaclyn A. Wisinski, Rachel J. Fenske, Kristina A. Matkowskyj, Michelle E. Kimple, Caroline M. Alexander, Matthew J. Merrins and Dudley W. Lamming (see Perspectives)

Muscle

- 647 Loss of maximal explosive power of lower limbs after 2 weeks of disuse and incomplete recovery after retraining in older adults
Enrico Rejc, Mirco Floreani, Paolo Taboga, Alberto Botter, Luana Toniolo, Lina Cancellara, Marco Narici, Boštjan Šimunič, Rado Pišot, Gianni Biolo, Angelina Passaro, Joern Rittweger, Carlo Reggiani and Stefano Lazzer

Neuroscience

- 667 Differential processing in modality-specific Mauthner cell dendrites
Violeta Medan, Tuomo Mäki-Marttunen, Julieta Sztarker and Thomas Preuss (see Perspectives)
- 691 GABA concentration in sensorimotor cortex following high-intensity exercise and relationship to lactate levels
James P. Coxon, Robin F. H. Cash, Joshua J. Hendrikse, Nigel C. Rogasch, Ellen Stavrinou, Chao Suo and Murat Yücel
- 703 Activity-dependent control of NMDA receptor subunit composition at hippocampal mossy fibre synapses
Mario Carta, Bettadapura N. Srikumar, Adam Gorlewicz, Nelson Rebola and Christophe Mulle
- 717 Adenosine A₁ receptor activates background potassium channels and modulates information processing in olfactory bulb mitral cells
Natalie Rothermund, Svenja Winandy, Timo Fischer, Kristina Schulz, Torsten Fregin, Nadine Alstedt, Melanie Buchta, Janick Bartels, Mattias Carlström, Christian Lohr and Daniela Hirnet

Letters

- 735 Strain–volume loops in severe aortic valve disease
Alessio Lilli and Giancarlo Casolo
- 737 Antioxidant therapy for muscular dystrophy: caveat lector!
Ken D. O'Halloran, Kevin H. Murphy and David P. Burns
- 739 Reply from Gavin J. Pinniger, Jessica R. Terrill, Miranda D. Grounds and Peter G. Arthur
Gavin J. Pinniger, Jessica R. Terrill, Miranda D. Grounds and Peter G. Arthur

Editor's Choice